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(21) International Application Number: PCT/US97/01603 (22) International Filing Date: 22 January 1997 (22.01.97) (30) Priority Data: 60/010,471 23 January 1996 (23.01.96) US Not furnished 9 January 1997 (09.01.97) US (60) Parent Application or Grant (63) Related by Continuation US 60/010,471 (CIP) Filed on 23 January 1996 (23.01.96) (71) Applicant (for all designated States except US): AFFYMETRIX, INC. [US/US]; 3380 Central Expressway, Santa Clara, CA 95051 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): LOCKHART, David, J. [US/US]; Apartment 205, 480 Oak Grove Drive, Santa Clara, CA 95054 (US). CHEE, Mark [AU/US]; 3199 Waverly Street, Palo Alto, CA 94306 (US). GUNDERSON, Kevin [US/US]; 1090 Tanland Drive 103, Palo Alto, CA 94303 (US). LAI, Chaoqiang [CN/US]; 1901 Halford Avenue #230, Santa Clara, CA 95051 (US). WODICKA,		Lisa [US/US]; 3770 Flora Vista #603, Santa Clara, CA 95051 (US). CRONIN, Maureen, T. [US/US]; 771 Anderson Drive, Los Altos, CA 94024 (US). LEE, Danny [US/US]; 5520 Le Franc Drive, San Jose, CA 95118 (US). TRAN, Huu, M. [US/US]; 3697 Cape Cod Court #1, San Jose, CA 95117 (US). MATSUZAKI, Hajime [US/US]; 562 Kendall Avenue #26, Palo Alto, CA 94306 (US). McGALL, Glenn, H. [CA/US]; 750 North Shoreline Boulevard, Mountain View, CA 94041 (US). BARONE, Anthony, D. [US/US]; 2118 Ellen Avenue, San Jose, CA 95125 (US). (74) Agents: HUNTER, Tom et al.; Townsend and Townsend and Crew L.L.P., 8th floor, Two Embarcadero Center, San Francisco, CA 94111 (US). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: NUCLEIC ACID ANALYSIS TECHNIQUES		
(57) Abstract <p>The present invention provides a simplified method for identifying differences in nucleic acid abundances (e.g., expression levels) between two or more samples. The methods involve providing an array containing a large number (e.g. greater than 1,000) of arbitrarily selected different oligonucleotide probes where the sequence and location of each different probe is known. Nucleic acid samples (e.g. mRNA) from two or more samples are hybridized to the probe arrays and the pattern of hybridization is detected. Differences in the hybridization patterns between the samples indicates differences in expression of various genes between those samples. This invention also provides a method of end-labeling a nucleic acid. In one embodiment, the method involves providing a nucleic acid, providing a labeled oligonucleotide and then enzymatically ligating the oligonucleotide to the nucleic acid. Thus, for example, where the nucleic acid is an RNA, a labeled oligoribonucleotide can be ligated using an RNA ligase. In another embodiment, the end labeling can be accomplished by providing a nucleic acid, providing labeled nucleoside triphosphates, and attaching the nucleoside triphosphates to the nucleic acid using a terminal transferase.</p>		